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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,229	11/26/2003	Wei Fan	YOR920030429USI (8728-651)	9160
46069 7590 12/22/2006 F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797			EXAMINER BELL, CORY C	
			ART UNIT	PAPER NUMBER
			2164	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/22/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/723,229

**Applicant(s)**

FAN ET AL.

**Examiner**

Cory C. Bell

**Art Unit**

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 21 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-12 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/21/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
**SAM RIMELL**  
**PRIMARY EXAMINER**

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-12, and 15 have been examined.

#### ***Response to Arguments***

2. The declaration under 37 CFR 1.132 filed 9/21/2006 is insufficient

The evidence of record contains contradictory information. The listing of the graduate student' names suggests inventive contribution, yet the declaration indicates no inventive contribution by the student. This contradiction leads to a conclusion of insufficient evidence, although, this might be resolved by providing more information from the graduate student himself/herself as to degree and nature of the contribution.

3. Claim 11 has changed the definition of the term A from the total number of the symbols to the frequency of the symbols. Both the applicants' specification and the reference cited by the examiner in the previous rejection define the moving window size in exactly the same manor. In which A is the total number or symbols or symbol size.

4. As per the rejection of claim 15 under 35 USC 101, the rejection stands as the claim still fails to provide a useful concrete and tangible result. Although the claim has been amended, the claim still fails to positively recite the act of executing the steps of the method to generate a useful concrete and tangible result.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2164

Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not provide support for "A is a frequency of the symbols."

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 15 is rejected under 35 U.S.C. 101. The fact that the instructions are executable by a processor does not mean that the instructions are processed. Thus, claim 15 cannot produce a useful concrete and tangible result if the instructions are not executed, as no result will be produced.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1-10, 12 and 15 rejected under 35 U.S.C. 102(a) as being Clearly Anticipated by "Indexing Weighted-Sequences in Large Databases".

8. *As per Claims 1 and 15,*

receiving a sequence; {Section 3 “Weighted Sequences”}

receiving a window size; {Section 5.1 Para 2}

encoding the sequence into a weighted-sequence; {Section 3}

encoding the weighted sequence into one or more one-dimensional sequences; {Section 5.2 Para 3} wherein the length of each of the one or more one-dimensional sequences is less than the window size; {Section 5.2 Para 2} inserting each of the one or more one-dimensional sequences into a trie structure; {Section 5.2 Para 5}

and generating the index, comprising:

generating a current sequential ID and a maximum sequential ID pair for generating each of the one or more trie nodes, wherein the current sequential ID of any descendant of a given trie node is between the current sequential ID of the given trie node and the maximum sequential ID; {Section 5.2 Para 6}

generating an iso-depth link for each unique symbol in each of the one or more one-dimensional sequences; {Section 5.2 Para 8} wherein the iso-depth link comprises trie nodes under the symbol; {Section 5.2 Para 8 and Section 5.2 Paras 1 and 2} and

generating an offset list comprising an original position of each of the one or more subsequences in the weighted-sequence. {Section 5.2 Para 5}

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9. *As per Claim 2,*

2. The method of claim 1, wherein encoding the sequence into a weighted-sequence comprises encoding the sequence with weights represented by real numbers; {Section 5.1 Para 3}

10. *As per Claim 3,*

3. The method of claim 2, wherein encoding the sequence with weights represented by real numbers, comprises discretizing the sequence into a number of equi-width units. {Section 5.1 Para 3}

11. *As per Claim 4,*

4. The method of claim 1, wherein inserting each of the one or more one-dimensional sequences into a trie structure comprises using a depth-first traversal. {Section 5.2 Para 6}

12. *As per Claim 5,*

5. The method of claim 1, wherein creating the weighted-sequences index, wherein the weighted-sequences index comprises an iso-depth index, wherein the iso-depth index is a one-dimensional buffer. (Section 5.3)

13. *As per Claim 6,*

6. The method of claim 1, wherein creating the weighted-sequences index, wherein the weighted-sequences index comprises an iso-depth index, wherein the iso-depth index is a B.sup.+ tree. (Section 5.2 para 8)

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14. *As per Claim 7,*

7. The method of claim 1, wherein creating the weighted-sequences index, wherein the weighted-sequences index comprises an iso-depth index, wherein the iso-depth index is a linked list.

(Section 5.2 para 6 and section 5.3)

15. *As per Claim 8,*

8. The method of claim 1, wherein receiving a sequence comprises receiving one or more elements in the sequence, wherein each of the one or more elements are represented by one or more (symbol, weight) pairs. {Section 3 Para 5}

16. *As per Claim 9,*

9. The method of claim 8, wherein receiving one or more elements in the sequence, wherein each of the one or more elements are represented by one or more (symbol, weight) pairs, and wherein each of the symbol elements of the one or more (symbol, weight) pairs correspond to a non-uniform frequency distribution. {Section 1 "Our Contributions" 3<sup>rd</sup> bullet point}

17. *As per Claim 10,*

10. The method of claim 9, further comprising reordering the one or more one-dimensional sequences prior to inserting each of the one or more one-dimensional sequences into a trie structure using the non-uniform frequency distribution to generate a new sequence. {Section 1 "Our Contributions" 3<sup>rd</sup> bullet point}

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18. *As per Claim 12,*

12. The method of claim 1, wherein receiving a sequence comprises receiving one or more scientific datasets, transforming each of the one or more scientific datasets into one or more sequence, concatenating the one or more sequences to form a long sequence. {Section 4}

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cory C. Bell whose telephone number is (571) 272 2736. The examiner can normally be reached on m-f 8:30-5:00.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272 4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
**SAM RIMELL**  
**PRIMARY EXAMINER**